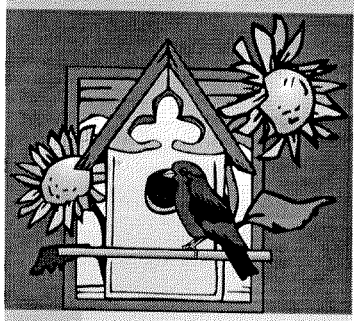
July/August 2001

Editor:
Jean Eilertson, PharmD



The Apothecary Bulletin

PHARMACY SERVICE & THERAPEUTICS COMMITTEES
US ARMY MEDDAC, FORT CARSON, COLORADO

FORMULARY CHANGES

The Pikes Peak Region Formulary Committee meet on 28 June 2001 and the Evans' Pharmacy and Therapeutics Committee meet on 10 July 2001 with the following medications ***added*** to the Formulary:

+ metoprolol sustained release 25mg and 50mg tablets (*Toprol XL*) — **for use in CHF only** (as effective as carvedilol; once daily dosing and less costly)
+ niacin extended release 500mg tablets (*Niaspan*) — **see related article**

The following medications were ***deleted*** from the Formulary:

- nitroglycerin 0.3mg and 0.6mg sublingual tablets — **0.4mg SL tablets remain on formulary**
- papaverine capsules
- phenoxybenzamine capsules

At the Pikes Peak Region Formulary Committee Meeting, there was discussion on deleting cerivastatin (*Baycol*) 0.2mg and 0.3mg tablets due to limited use. Since there is a significant number of patients on these strengths of *Baycol* at Evans, we will continue to keep all strengths on Formulary. The manufacturer recommends 0.4mg as the starting dose of *Baycol*.

As part of the ongoing drug class review process, the Pikes Peak Region Formulary Committee (with representatives from the Air Force Academy, Peterson AFB, and Evans) will conduct reviews as follows:

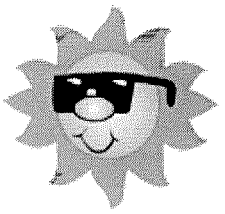
September 2001 = endocrine/ hematological agents
November 2001 = gastrointestinal/ renal/genitourinary agents
January 2002 = central nervous system agents
March 2002 = dermatologic/ ophthalmologic agents

Pharmaceuticals submitted for Formulary consideration will be reviewed based on the above schedule. If a medication is a new entity, it may be considered earlier than the above schedule if submitted via a New Drug Request.

Providers desiring to have input into the drug class reviews are encouraged to contact one of the committee members: **LTC Edward Torkilson (Pharmacy), MAJ Robert Gray (Family Practice), and Dr. Garold Paul (Internal Medicine).** The next Formulary Committee Meetings will be held on 6 September 2001 (Pikes Peak) and 11 September 2001 (Evans P&T). New Drug Requests must be received by the Chief, Pharmacy Service, no later than **24 August** to be considered at the September Formulary Committee meetings.

Guidelines Developed

Guidelines for COX-2 Inhibitor Use (joint effort of the Pikes Peak Region Formulary Committee) and Nonsedating Antihistamine Use have been developed and can be found at **Enclosure 1 and 2.**



"The life so short, the craft so long to learn."
— Hippocrates

Inside this Issue:

Q & A

What is Evans' pharmaceutical cost per month associated with the cardiovascular agents?

See page 5
(excludes antiarrhythmic agents)

NIASPAN ADDED TO FORMULARY

Niaspan (extended release niacin), the only FDA approved once-daily formulation of niacin, was added to the Pikes Peak Region Formulary at the July meeting. A study comparing 1.5gm per day *Niaspan* to 1.5gm per day immediate release niacin has shown equivalent efficacy with decreased side effects with *Niaspan.* The Arterial Disease Multiple Intervention Trial (ADMIT), a prospective, double-blind, randomized, placebo-controlled trial published in the 18 September issue of *JAMA*, involved 468 participants with diagnosed peripheral artery disease including 125 of whom had diabetes. The study concluded that *therapeutic doses of niacin can be used by diabetics for the control of cholesterol disorders safely and effectively and may be considered as an alternative to existing therapies used to manage high triglycerides or low HDL cholesterol.*

The following is from the manufacturer's product information:
Efficacy: Product information on *Niaspan* reports the following changes in lipid levels: LDL decrease from 14% to 17%; HDL increase from 22% to 26%; Triglyceride decrease from 28% to 35%; Lp(a) decrease from 24% to 27%.

Safety and Tolerability: *Niaspan* uses a HydroGel Programmed-Release&trade formulation to control drug release. In clinical trials, *Niaspan* had 78% fewer flushing episodes compared to immediate release niacin with less than 6% of patients discontinuing therapy due to flushing. In a placebo-controlled clinical trial, fewer than 1% of patients taking *Niaspan* discontinued therapy due to serum transaminase (AST/ALT) elevations greater than 2 times the upper limit of normal (ULN). In a long-term extension study involving 722 patients, fewer than 1% of patients (4 of 722) treated with *Niaspan* who had normal AST/ALT levels at baseline experienced elevations greater than 3 times the ULN. **LFT monitoring is recommended as follows: before treatment, every 6 to 12 weeks for the first year, and periodically thereafter. *Niaspan* should not be taken by patients who have liver problems and should be used with caution by patients who consume substantial amounts of alcohol or have a history of kidney problems.**

Dosing: The recommended dosing scheme for *Niaspan* is as follows:

- weeks 1 to 4: 500mg qhs
- weeks 5 to 8: 1000mg qhs (2 x 500mg tablets)
- after week 8: titrate to patient response and tolerance, if necessary, to a **maximum dose of 2000mg**

Flushing can be minimized through slow, upward titration of *Niaspan.* In addition, patients should be advised to avoid alcohol, hot drinks, and spicy foods before taking *Niaspan.* A regular strength aspirin may be taken up to 30 minutes before dosing to help reduce flushing discomfort. To minimize the risk of stomach upset, patients should take *Niaspan* with a low-fat snack (e.g. low-fat yogurt, low-fat whole-wheat crackers with a small glass of apple juice, or a banana with a small glass of skim milk).

Concomitant Therapy: Clinical trials have studied the additive effects of niacin in combination with other cholesterol-modifying therapies. *Niaspan* is indicated for concomitant use with bile acid sequestrants and has been studied with combination therapy including HMG-CoA reductase inhibitors ("statins"). **Rare cases of rhabdomyolysis have been associated with concomitant administration of lipid-altering doses (>1gm/day) of niacin and HMG-CoA reducatse inhibitors.**

PRESCRIBING CHANGES

Bayer, manufacturer of *Baycol* (cerivastatin), recently sent out a *Dear Doctor* letter with information on voluntary changes to the prescribing guidelines. A summary of changes include:

- *Dosage and Administration*: highlights that 0.4mg is the recommended starting dose of *Baycol*
- *Warnings—Skeletal Muscle*: reinforces the starting dose as 0.4mg with a statement that initiating therapy above 0.4mg as a starting dose increases the risk of myopathy and rhabdomyolysis
- *Patient Information about Baycol*: explains to the patient that if they are starting on *Baycol* for the first time, their daily dose should be 0.4mg or lower

The revisions were made due to reports received of muscle weakness and rhabdomyolysis during post-marketing with a **number of the cases due to prescribing inconsistent with product labeling** [i.e. patients treated with concurrent gemfibrozil (*Lopid*) therapy and/or receiving *Baycol* at 0.8mg for a starting dose].

Purdue Pharma, manufacturer of *OxyContin* (oxycodone controlled release), has made changes to the physician prescribing information for *OxyContin* in efforts to help reduce the problem of abuse and diversion of the medication.

- *Indications and Usage*: states *OxyContin* is **NOT** intended for PRN use and **NOT** indicated for pain in the immediate post-operative period, or if the pain is mild or not expected to persist for an extended period of time
- *BOX WARNING*: states *OxyContin* has an abuse liability similar to morphine; *OxyContin* can be abused in a manner similar to other opioid agonist, legal or illicit; *OxyContin* is a controlled-release oral formulation indicated for the management of moderate to severe pain when a continuous, around-the-clock analgesic is needed for an extended period of time; *OxyContin* is **NOT** intended for PRN analgesia; *OxyContin* 80mg and 160mg tablets are for use in opioid-tolerant patients only (these strengths may cause fatal respiratory depression when administered to patients not previously exposed to opioids); *OxyContin* tablets are to be swallowed whole and are not to be broken, chewed, or crushed.

CDC UPDATES INFLUENZA SCHEDULE

The U.S. Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) has developed supplemental recommendations for this fall's influenza vaccination schedule. By the end of October, manufacturers of the vaccine estimate two-thirds of the normal quantity, about 50 million doses, will be available.

The ACIP recommends that high-risk patients be informed when the vaccine will be available (September/October) and encouraged to present for a vaccination-only visit. High risk individuals include:

- ✧ people over the age of 64 years
- ✧ residents of nursing homes/other chronic-care facilities
- ✧ individuals of any age with chronic disorders of the pulmonary and cardiovascular systems, including asthma
- ✧ those who require regular follow-up or hospitalization for chronic metabolic disorders (e.g. diabetes, renal dysfunction, hemoglobinopathies, immunosuppression)
- ✧ children ages 16 months to 18 years undergoing long-term aspirin therapy
- ✧ women expected to be in the second or third trimester of pregnancy during the influenza season

Contacts of high-risk individuals (healthy individuals ages 50 to 64 years, others wishing to reduce their risk for influenza) should be offered vaccination beginning in November. The ACIP recommends that manufacturers, distributors, and vendors deliver complete orders early for hospitals and chronic-care facilities serving high-risk populations.

NEW GUIDELINE

New treatment guidelines developed by the American College of Rheumatology and published in the July issue of *Arthritis and Rheumatism* recommend bisphosphonates as first-line therapy in conjunction with calcium and vitamin D for preventing/treating glucocorticoid-induced osteoporosis (GIO). The guidelines can be found at: www.rheumatology.org/research/guidelines/osteo/osteoupdate.html.

NEW INDICATIONS/DRUGS

The FDA approved a change for ***Valtrex* (valacyclovir)** for the treatment of recurrent episodes of genital herpes from one 500mg *Valtrex* caplet twice a day for 5 days to one 500mg *Valtrex* caplet twice a day for 3 days. Valtrex is indicated for the initial and recurrent treatment and for suppression of genital herpes outbreaks.

The FDA has approved argatroban for use in patients who have or who are at risk of developing thombosis associated with heparin-induced thrombocytopenia and are undergoing percutaneous coronary interventions.

HERB OF THE (every other) MONTH

Hawthorn, used as far back as the first century A.D. by Dioscorides, a Greek herbalist, became popular in Europe and the United States towards the end of the nineteenth century. Preparations have been used in the treatment of either high or low blood pressure, tachycardia or arrhythmias. The plant is purported to have antispasmodic and sedative effects — Chinese medicine employs the berries of *Cratageus pinnatifida* as a digestive and circulatory stimulant. Hawthorn grows as a bushy shrub or tree which can reach a height of 30 feet. The white flowers, which bloom from April to June, have a distinctive, strong smell. Although there are multiple species, *Cratageus oxyacantha* and *Cr.* monogyna, are used most often for medicinal purposes.

The leaves, flowers, and berries (haws) of hawthorn contain a variety of bioflavonoid-like complexes that appear to be primarily responsible for the cardiac actions of the plant. In Germany, hawthorn is widely used to treat angina and the early stages of CHF. Extracts of hawthorn dilate blood vessels, in particular coronary blood vessels, resulting in reduced peripheral resistance and increased coronary circulation. Hawthorn extracts may increase the intracellular concentrations of cyclic AMP by influencing the activity of the enzyme phosphodiesterase. It may also have further cardioprotective effects that become pronounced after prolonged use. Beneficial effect on triglycerides, cholesterol, and blood sugar levels have been observed in Chinese studies in animals.

Hawthorn flowers, leaves, and berries contain from 1% to 3% oligomeric procyanidins and 1% to 2% flavonoids. It is available in tinctures, dried berries and leaves, capsules, and tablets. Capsules or tablets of 80mg to 300mg, two to three times a day may be taken. If using berry preparations, the recommended amount is usually four to five grams per day. It may be necessary to take hawthorn for 3 months or more for maximum effect and should be considered a long-term therapy.

At normal doses, no side effects have been reported. At very high doses, people might experience symptoms related to low blood pressure.

Hawthorn extracts may increase the activity, but not necessarily the toxicity, of digoxin. Since hawthorn inhibits thromboxane synthesis, it may be incompatible with aspirin. Although no interactions have been reported, use hawthorn with caution if combined with other heart or blood pressure medication. There have been inadequate studies to establish whether hawthorn is safe to use for pregnant and nursing mothers.

References: The Review of Natural Products
Various Websites

COLORECTAL CANCER GUIDELINES

The American Medical Association along with 17 other collaborating organizations have issued guidelines for colorectal cancer screening and surveillance. The guidelines are available on the AMA website at: www.ama-assn.org/ama/pub/category/5246.html.

Recommendations:
All persons at average risk of colorectal cancer, which equates to all asymptomatic individuals age ≥ 50 years who have no other risk factor but age, should be screened using

- annual fecal occult blood test (FOBT)* and/or flexible sigmoidoscopy at least every five years,** or
- colonoscopy every 10 years,*** or
- double-contrast barium enema every 5-10 years.***/ ****

Surveillance of patients at high risk with colonoscopy**** at intervals individualized for age, duration of disease, and comorbidities is justified for individuals

- with a personal history of colorectal cancer or adenomatous polyps, or
- with a history of colorectal cancer or adenomatous polyps in a first degree relative, or
- diagnosed with inflammatory bowel disease, including ulcerative colitis or Crohn's disease.

* While there is demonstrated significant benefit to biennial screening with FOBT, the benefit from annual screening appears to be greater.

** Despite inadequate evidence to demonstrate that FOBT in combination with flexible sigmoidoscopy is more effective than either test alone, the low sensitivity of FOBT in detecting polyps may warrant the use of both tests.

*** The exact time interval for use of these screening tests is currently uncertain.

**** When colonoscopy is not feasible, double-contrast barium enema plus flexible sigmoidoscopy may be used as an alternative. When colonoscopy is incomplete, double-contrast barium enema may be used, unless the patient has been diagnosed with inflammatory bowel disease, including ulcerative colitis or Crohn's disease.

August is ...

National Immunization Awareness Month

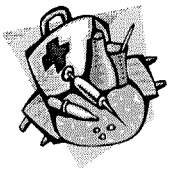
WEBSITES OF INTEREST

http://evans.amedd.army.mil – Evans' page
http://evans.amedd.army.mil/pharmnew/ — Evans' pharmacy website; access to the Formulary, *Herbal-Drug Interaction Chart*, Drug Information, past *Bulletins*
http://www.pec.ha.osd.mil – DoD Pharmacoeconomic Center, Ft Sam Houston
http://www.cs.amedd.army.mil/qmo/pguide.htm – DoD/VHA Practice Guidelines; current guidelines include Low Back Pain, Asthma, Diabetes, COPD, Hypertension, Hyperlipidemia, Tobacco Use Cessation, Major Depressive Disorder, Dysuria in Women

Cancer Websites

www.cancerresearch.org — Cancer Research Institute
www.nci.nih.gov — US National Cancer Institute
www.nfcr.org/html/homepage/index.html — National Foundation for Cancer Research
www.asco.org — American Society of Clinical Oncology
www.ecog.org — Eastern Cooperative Oncology Group
swog.org/index.asp — Southwest Oncology Group
www.licr.org — Ludwig Institute for Cancer Research
www.cancer.org — American Cancer Society

ADVERSE DRUG REACTION REPORT



There were 29 adverse drug reactions (ADRs) documented for May (n=16) and June (n=13), of which 10 (34%) were reported **spontaneously** (2 each from Family Practice and Pediatrics; and 1 each from Clinical Pharmacy, Dermatology, Inpatient Pharmacy, Outpatient Pharmacy, PACC, and 4E). The most prevalent adverse events involved the anti-infective agents (n=8; 28%) and the cardiovascular agents (n=7; 24%). The rate of outpatient ADR reporting has remained consistent over the last year.

One event was deemed preventable: 40 year old female with hyperlipidemia who had been followed by an outside provider on *Lipitor* and *Lopid* was changed at initial EACH appointment to *Baycol* (*Lopid* was continued). At follow-up in 1 month, AST was 227 (previously 14) and ALT was 133 (previously 38). *Baycol* was discontinued, and at follow-up in 3 weeks, LFTs returned to normal. **REMINDER:** the combination of *Baycol/Lopid* is contraindicated due to the risk of rhabdomyolysis.

Thank you to all providers who continue to report adverse events.

Q & A Evans' cost of therapy of cardiovascular agents (antiarrhythmic agents not included):

MEDICATION	Usual Adult Daily Dose Range	Dosing Frequency	Monthly Cost
Calcium Channel Blockers			
Diltiazem (*Tiazac*)	120 to 360mg	1	$8.28 to $13.19
Felodipine (*Plendil*)	2.5 to 20mg	1	$7.35 to $30.00
Nifedipine (*Adalat CC*)	30 to 120mg	1	$12.30 to $12.60
Verapamil (*Calan SR*)	90 to 480mg	2	$3.11 to $15.40
Vasodilators			
Isosorbide Dinitrate (*Isordil*)	5 to 480mg	2 - 3	$3.00 to $43.20
Nitroglycerin (*Nitrostat*)	0.4mg	PRN	$2.17 to $25.00
Nitroglycerin (transdermal patch)	0.1 to 0.8mg	1	$12.10 to $30.80
Peripheral Vasodilators			
Hydralazine (*Apresoline*)	10 to 300mg	2	$1.80 to $28.80
Beta Blockers			
Atenolol (*Tenormin*)	25 to 100mg	1 - 2	$0.30 to $1.20
Metoprolol (*Lopressor*)	50 to 300mg	2	$25.20 to $115.20
Metoprolol (*Toprol XL*) – CHF only	12.5 to 200mg	1	$4.50 to $36.00
Propranolol (*Inderal LA*)	40 to 480mg	1	$2.40 to $12.00
Propranolol (*Inderal*)	10 to 480mg	2 -4	$0.60 to $9.60
Alpha/Beta Blockers			
Carvedilol (*Coreg*)	3.125 to 50mg	2	$56.08 to $112.10
Labetalol (*Normodyne*)	200 to 1,200mg	2	$31.20 to $82.80
Antiadrenergic, centrally acting			
Clonidine (*Catapres*) Patches	0.1mg to 0.3mg/24h	Q WK	$46.18 to $100.34
Clonidine (*Catapres*) Tablets	0.1 to 1.2 mg	2 - 3	$8.40 to $14.58
Methyldopa (*Aldomet*)	250 to 3,000mg	2	$2.47 to $28.80
Antiadrenergic, peripherally acting			
Doxazosin (*Cardura*)	1 to 16 mg	1	$1.50 to $6.60
Prazosin (*Minipress*)	1 to 30 mg	2 - 3	$1.20 to $21.60
Terazosin (*Hytrin*)	1 to 20mg	1	$1.50 to $7.20
ACE Inhibitors			
Captopril (*Capoten*)	25 to 150mg	2-3	$0.75 to $6.75
Fosinopril (*Monopril*)	10 to 40mg	1-2	$4.47 to $26.80
Lisinopril (*Prinivil*)	5 to 40mg	1	$2.08 to $4.15
Ramipril (*Altace*)	1.25 to 20mg	1 - 2	$3.60 to $14.40
Angiotensin Receptor Blocker			
Candesartan (*Atacand*)	4 to 32mg	1	$15.30 to $15.60
Lipid Agents			
Niacin (immediate release)	2 to 6gm	3	$2.34 to $7.02
Niacin sustained release (*Niaspan*)	500mg to 2gm	2	$6.97 to $20.29
Colestipol (*Colestid*)	2 to 30gm	2	$4.53 to $90.72
Gemfibrozil (*Lopid*)	600mg	2	$3.26
Cerivastatin (*Baycol*)	0.2 to 0.8mg	1	$9.19 to $14.82
Simvastatin (*Zocor*)	5 to 80mg	1	$12.16 to $29.05

"Imagination is more important than knowledge."
— Albert Einstein (1879-1955)

MEDICATION USE REVIEW COMMITTEE REPORT, RHONDA EUSTICE, PharmD

The Medication Use Review (MUR) Committee, with representatives from the medical staff, nursing, clinical pharmacy, and nutrition, reviewed a disease state evaluation on Pediatric Sinusitis and a drug utilization review on antihistamines/nasal steroids that were completed by the clinical pharmacy member, Rhonda Eustice, PharmD. Data was collected by Dr. Eustice and Connie Stroll, CPhT.

Follow-up Review on Pediatric Sinusitis

Background:

Pediatric Sinusitis guidelines were approved and sent to all EACH providers. This disease state review was conducted to obtain follow-up data on the prescribing patterns of EACH providers. A retrospective chart and CHCS review was done on 10% of the pediatric patients seen at EACH for sinusitis between December 2000 and June 2001.

Summary:

- 92% of the patients in this review were only seen once for sinusitis
- 53% of the patients in this review were seen in the Family Practice Clinic
- Per the new guidelines, recommendations are based on a patient's duration of symptoms:

Symptoms < 10 days (N=20)

Recommendation: mostly viral cause, symptomatic treatment

Per chart review:

- all patients were given antibiotics
- 29% were given second-line agents

Symptoms 10 to 14 days (N=6)

Recommendation: consider symptomatic treatment, suspect bacterial infection, antibiotic treatment A (amoxicillin, SMX-TMP)

Per chart review:

- all patients received antibiotics
- 80% were given second-line agents

Symptoms > 14 days (N=7)

Recommendation: antibiotic treatment A (amoxicillin, SMX-TMP), EENT consultation, antibiotic treatment B (second or third generation cephalosporins, *Augmentin*, macrolides for PCN-sensitive patients) for 21 to 28 days.

Per chart review:

- all patients received antibiotics
- 60% received second-line agents

Symptoms – unknown duration (N=4)

Per chart review:

- all patients received antibiotics
- 100% given second-line agents

Conclusion:

Per this review, it appears that 15 patients (56%) were given antibiotics for sinusitis which may have had a viral cause.

Antihistamine / Nasal Steroid Drug Utilization Review

Purpose:

- *Zyrtec* (cetirizine) has been taken off the EACH Formulary.
- A meta-analysis in the January 1998 issue of *The American Journal of Managed Care* compared nasal corticosteroids to nonsedating antihistamines for the treatment of allergic rhinitis and found that nasal steroids were equally effective or statistically superior to nonsedating antihistamines and recommended that nasal steroids should be the first-line therapy for allergic rhinitis.
- Nonsedating antihistamines are **not superior in efficacy** to the nasal steroids but **are significantly more costly**.
- Guidelines for the use of nonsedating antihistamines have been developed (attached as Enclosure)

A retrospective chart/CHCS review of 99 (15%) patients seen for allergic rhinitis between April and May 2001 was performed to evaluate the prescribing patterns of EACH providers.

Conclusion:

- Nasal steroids are considered first-line agents and are more cost-effective than nonsedating antihistamines.
- Only about 50% of the patients seen for allergic rhinitis were prescribed either first-line agents (*Deconamine SR, Atarax, Benadryl, Chlortrimeton, Sudafed*) or nasal steroids prior to being given nonsedating antihistamines.

COX-2 Inhibitors – Guideline for Use
Pikes Peak Region Formulary Committee

A recent drug use evaluation showed a high percentage of inappropriate patient selection and initial high dose use of the COX-2 Inhibitors. The following guidelines are to ensure appropriate use of these high cost agents.

Patient Selection

Celecoxib (*Celebrex*) or Rofecoxib (*Vioxx*) use is **appropriate** for the following [for patients considered to be at higher risk of upper GI events associated with NSAIDs††, consider: acetaminophen (OA) or salsalate]:

- history of peptic ulcer disease, NSAID related ulcer, clinically significant GI bleeding, or coagulation defect
- concurrent use of corticosteroids, anticoagulants, antiplatelet agents, methotrexate
- failure of an **adequate** trial with at least two different NSAIDs

*** The American College of Rheumatology recommends acetaminophen as first-line therapy of osteoarthritis.

†† Patients at higher risk for upper GI events with NSAIDs:
age ≥ 65 years
history of PUD or upper GI bleed
concurrent use of anticoagulants or glucocorticoids
comorbid conditions

Indications/Dosages

Celecoxib (*Celebrex*)
- osteoarthritis (OA) in adults = 100mg bid or 200mg qd
- rheumatoid arthritis (RA) in adults = 100mg to 200mg bid (*doses were equal in their effectiveness, however* ***some*** *patients derived additional benefit from the 200mg bid dose*)

Rofecoxib (*Vioxx*)
- osteoarthritis (OA) in adults = 12.5mg to 25mg qd

*** use of doses greater than Celecoxib 200mg qd or Rofecoxib 25mg qd will need to be accompanied by a **letter of justification** from the provider through the Service Line Chief

Additional information

Efficacy

Both celecoxib and rofecoxib have been reported to produce a lower risk of gastroduodenal erosions when compared to other traditional non-steroidal agents. Although the use of highly selective COX-2 inhibitors may results in a lower incidence of GI toxicity, it is not known whether other side effects may arise as a result of specific COX-2 inhibition. Clinical trials of celecoxib and rofecoxib have demonstated more efficacy than placebo and comparable efficacy to currently available NSAIDs (celecoxib to naproxen for OA; rofecoxib to ibuprofen, diclofenac). ***Given the lack of published data, celecoxib and rofecoxib should be considered second-line NSAID therapy for RA and OA and reserved for patients at high-risk for adverse outcomes to traditional NSAIDs.***

Renal Effects

Clinical trials with celecoxib and rofecoxib indicate these agents have effects on renal function comparable to non-selective NSAIDs. Expression of COX-2 in afferent and efferent arterioles likely accounts for these observations.

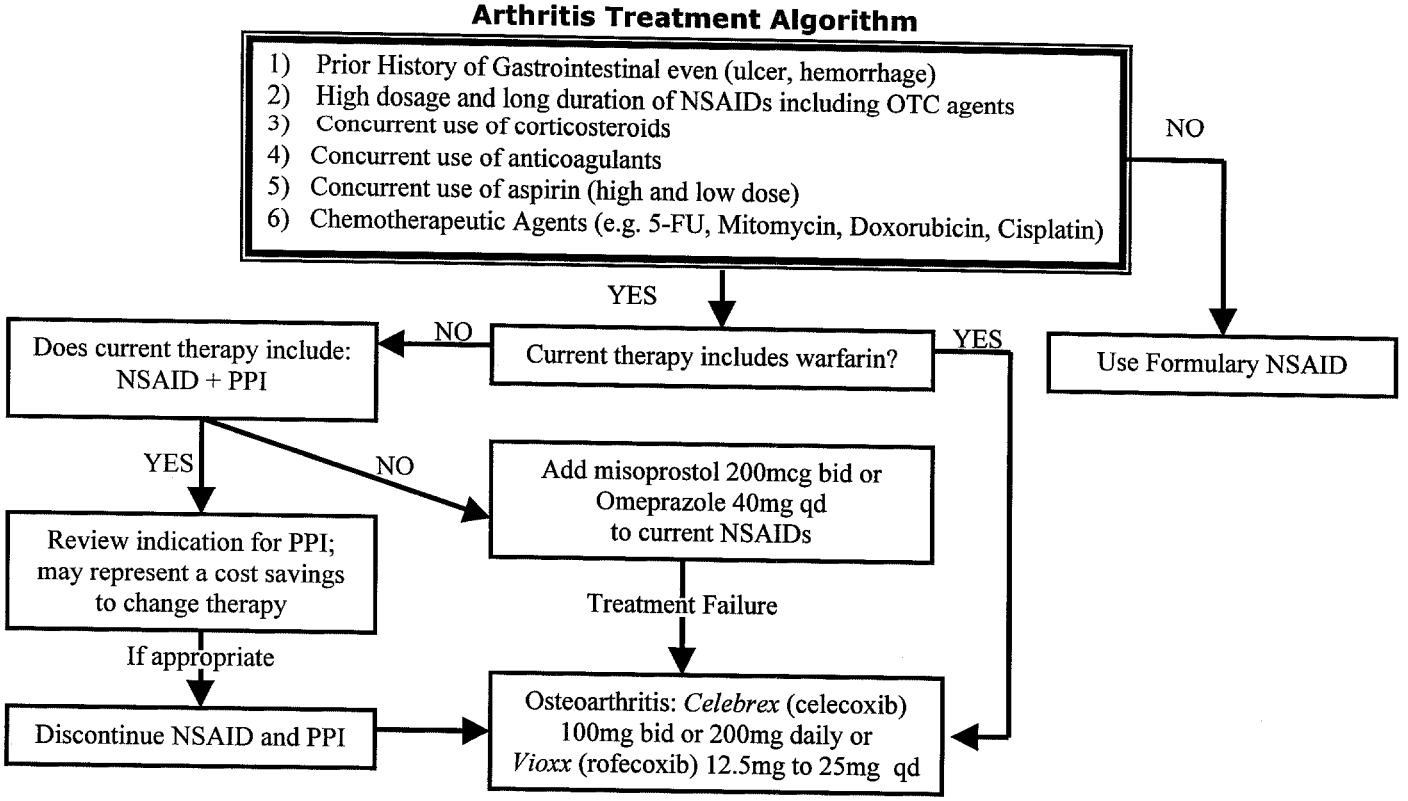
Gastroprotective Agents

If used concomitantly with NSAID therapy, consider stopping H2RA (cimetidine or ranitidine), PPI (omeprazole), or misoprostol if using for NSAID-induced GI symptoms.

Considerations

- Patients with a sulfonamide allergy should not receive celecoxib
- Patients with dyspepsia are not candidates for COX-2 therapy (they have been reported to cause dyspeptic symptoms)
- Patients lack of response to a NSAID is not indicative of the need for COX-2 therapy (they have not been shown to be superior)
- Patients with impaired renal function, heart failure, liver dysfunction, the elderly, and those taking diuretics and ACE inhibitors may be at risk for exacerbating renal effects similar to the NSAID class effects

Arthritis Treatment Algorithm



Assessing NSAID GI Risk: A simple self-assessment tool (G. Singh) can be used to help quantify the risk of NSAID gastrointestinal complications in patients with OA or RA.

Points	Age	Rate your Current Health Status	Have you been told you have OA or RA?	Are you taking a corticosteroid; if so for how long?	Have you ever been in hospital for GI problems?	Have you had Side Effects from NSAIDs?
0	<20	Very Well	No	0	No	No
1	21-25	Well		1		
2		Fair	Yes	1		Yes
3	26-30	Poor		1		
4	31-35	Very Poor		3		
5	36-40			3		
6	41-45			3		
7				4		
8	46-50			4	Yes	
9	51-55			4		
10	56-60			4		
11				5		
12	61-65			5		
13	66-70					
14	71-75					
16	76-80					
17	81-85					
18	>85					

Risk Level	Recommendations	Comments
1 = 0-10	No Risk	Patients may use a non-selective formulary NSAID
2 = 11-15	Moderate Risk	Patients may use a non-selective formulary NSAID
3 = 16-20	Significant Risk	<30 days or intermittent use – standard NSAID; >30 days use (chronic) Salsalate, if failure or intolerant, use COX-2 inhibitor
4 = >20	Substantial Risk	Use Salsalate or COX-2 inhibitor

Guideline for the Use of Nonsedating Antihistamines in Allergic Rhinitis (and Urticaria)

1. **Initial treatment:** PRN use of short acting antihistamines +/- decongestant
   options: chlorpheniramine and pseudoephedrine (*Deconamine SR*)
   diphenhydramine (*Benadryl*)
   chlorpheniramine (*CTM*)
   If required several times a week, it is best taken routinely at bedtime to provide antihistamine prophylaxis while minimizing sedative side effects. Tolerance to the sedative side effect usually develops with continued use.

2. Patients who are intolerant of antihistamine therapy as described above, or who cannot be adequately controlled on them, should start a **nasal corticosteroid spray** if they regularly require medications. Advise the patient that this takes days to work and should be continued for at least two to four weeks before the dose may be tapered to a level adequate to maintain symptom control.
   options: fluticasone (*Flonase*) 1 spray each nostril QD
   If *Flonase* not effective, *Nasonex* may be tried; again, taper to minimal dose required for control.

3. Patients who fail to improve on nasal steroids and are intolerant to standard antihistamines, should be given a trial of a **nonsedating antihistamine**.
   option: fexofenadine (*Allegra*) should be started as a single AM dose of 60mg supplemented by a standard antihistamine at bedtime. The reason that *Allegra* is being given should be noted on the prescription or in the comment field for CHCS users.

4. For patients who are still sedated the following day from taking the nighttime dose of a standard antihistamines, or who by their occupations or medical conditions require that they use nonsedating antihistamines, either *Allegra* 60mg BID (fully non-sedating) or *Allegra* 180mg QD should be tried.

5. If all of the above fail, or the patient's occupation requires a fully nonsedating antihistamine and the patient does not respond to *Allegra*, the physician may then prescribe loratadine (*Claritin*) 10mg QD or cetirizine (*Zyrtec*) 10mg QHS after submitting a **New Drug Request** (internal use only).

6. Any patient who fails to be controlled with a good therapeutic trial of the above drugs or is intolerant of them should be offered a referral for Allergy evaluation. Skin testing can facilitate avoidance of allergens. Immunotherapy may offer more long-term improvement while lessening or even eliminating the need for medications.

7. These guidelines apply to allergic rhinitis and not to chronic urticaria. If the patient with **chronic urticaria** is unresponsive to full doses of hydoxyzine (*Atarax*) and diphenhydramine (*Benadryl*) or is intolerant of them, then ceterizine (*Zyrtec*) 10mg, and if this is ineffective loratadine (*Claritin*) 10mg, should be used (submit a New Drug Request). Again, this should be noted in the comment field.